

# **What Yellow Brick Road!? Trauma System “Benchmarks”**



## **California State Trauma Summit V**

"What gets measured gets done." —Anonymous

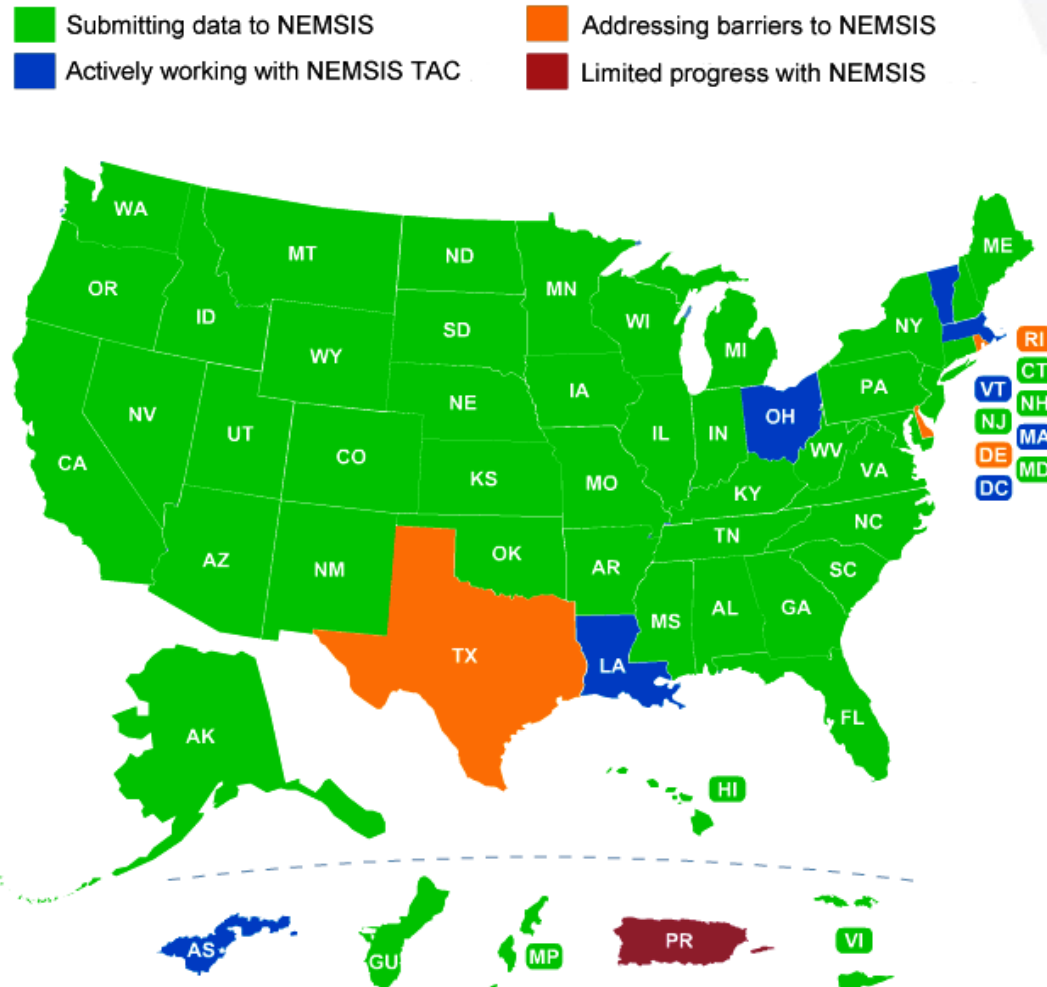
# What we will cover

- Where are we (NEMSIS & NTDS)
- Making Connections
- MVC Success!
- What does DOT want?
- Future Data Exchange
- We want Functional Status!




# NEMSIS Participation

## State & Territory Version 2 Information




# Current NEMSIS Data



## EMS Data Cube

View | Design



**NEMSIS Enhanced**

- [-] Measures
  - [-] Event Measures
    - [-] Events
      - ☒ Count of Events
    - [+] Average EMS Times
  - [+] Medication Measures
  - [+] Procedure Measures
- [+] Alcohol Drug Indicators
- [+] Barriers To Patient Care
- [+] Cardiac Arrest Elements
- [+] Condition Codes
- [+] Dispatch Delay
- [-] EMS Call Date
  - ☒ Year - Quarter - Month - Day

[-] All	[+] Calendar 2012	[+] Calendar 2013	[+] Calendar 2014
Count of Events	Count of Events	Count of Events	Count of Events
49,046,271	19,899,148	23,915,705	5,231,418

Possible Injury ☒

Yes

Possible Injury	Count of Events
Yes	6,862,396

# NTDB Yearly Data Collection

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Admission Year	Number of Records	Participating Centers
2002-2006	1,484,456	565
2007	507,288	436
2008	635,013	574
2009	685,783	686
2010	730,108	706
2011	784,688	756
<b>2012</b>	<b>833,311</b>	<b>805</b>

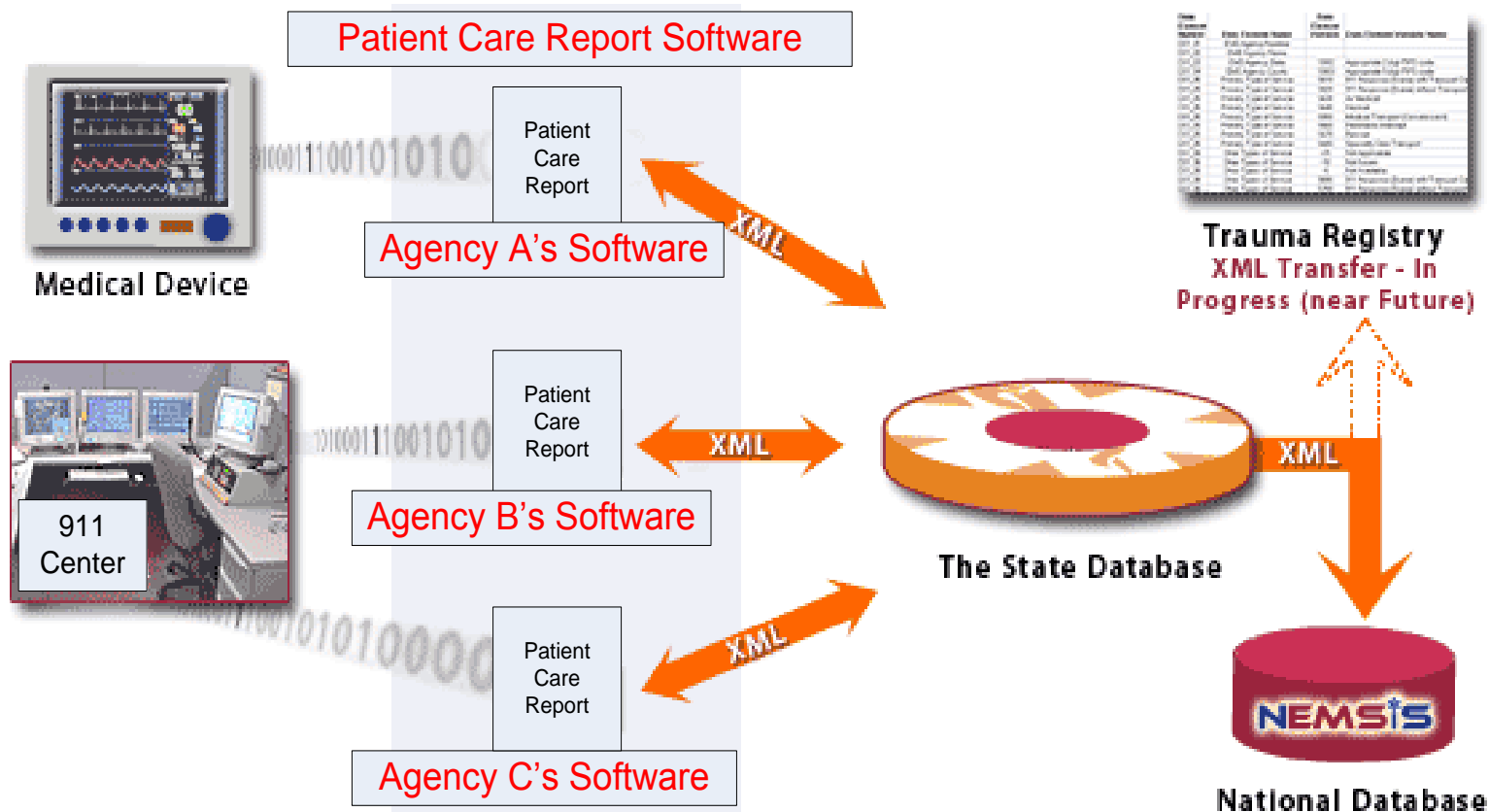
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NATIONAL TRAUMA DATA BANK

# THE PORTABILITY OF DATA - the **NEMSIS** STANDARD.





# National Trauma Data Standard

## ACS NTDB NATIONAL TRAUMA DATA STANDARD: Data Dictionary

2014 ADMISSIONS

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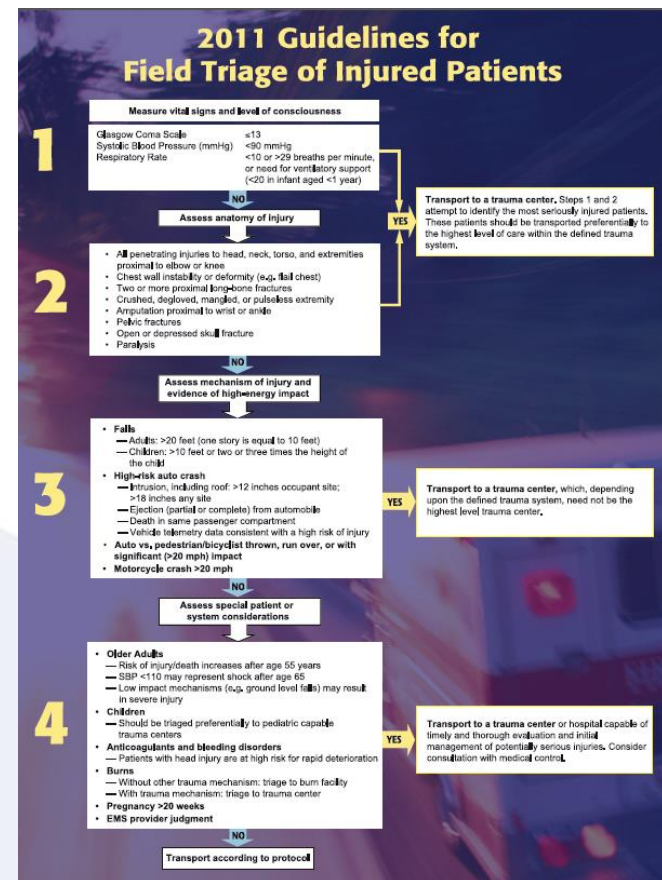


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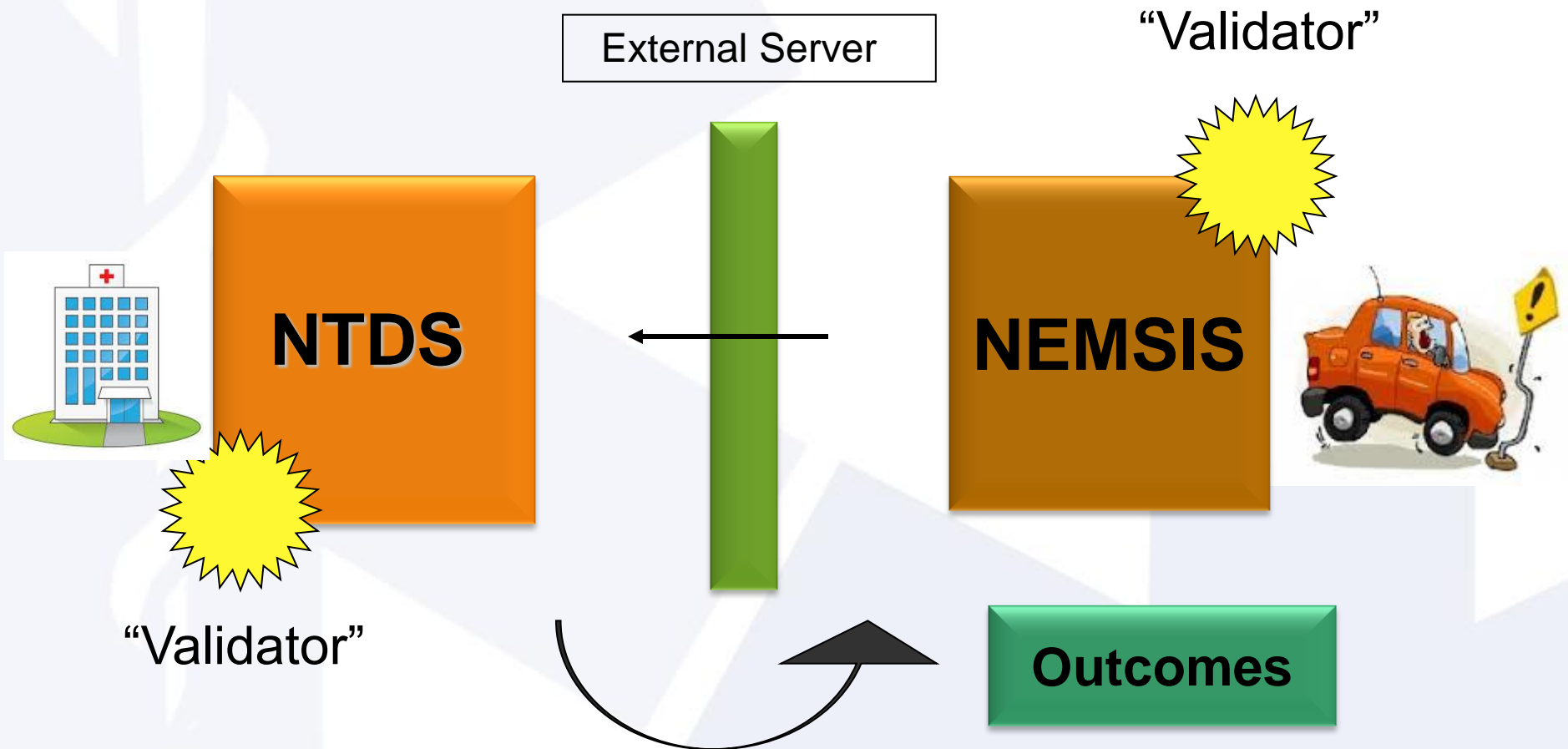


Revised October, 2013

37 elements “harmonized” across the standards

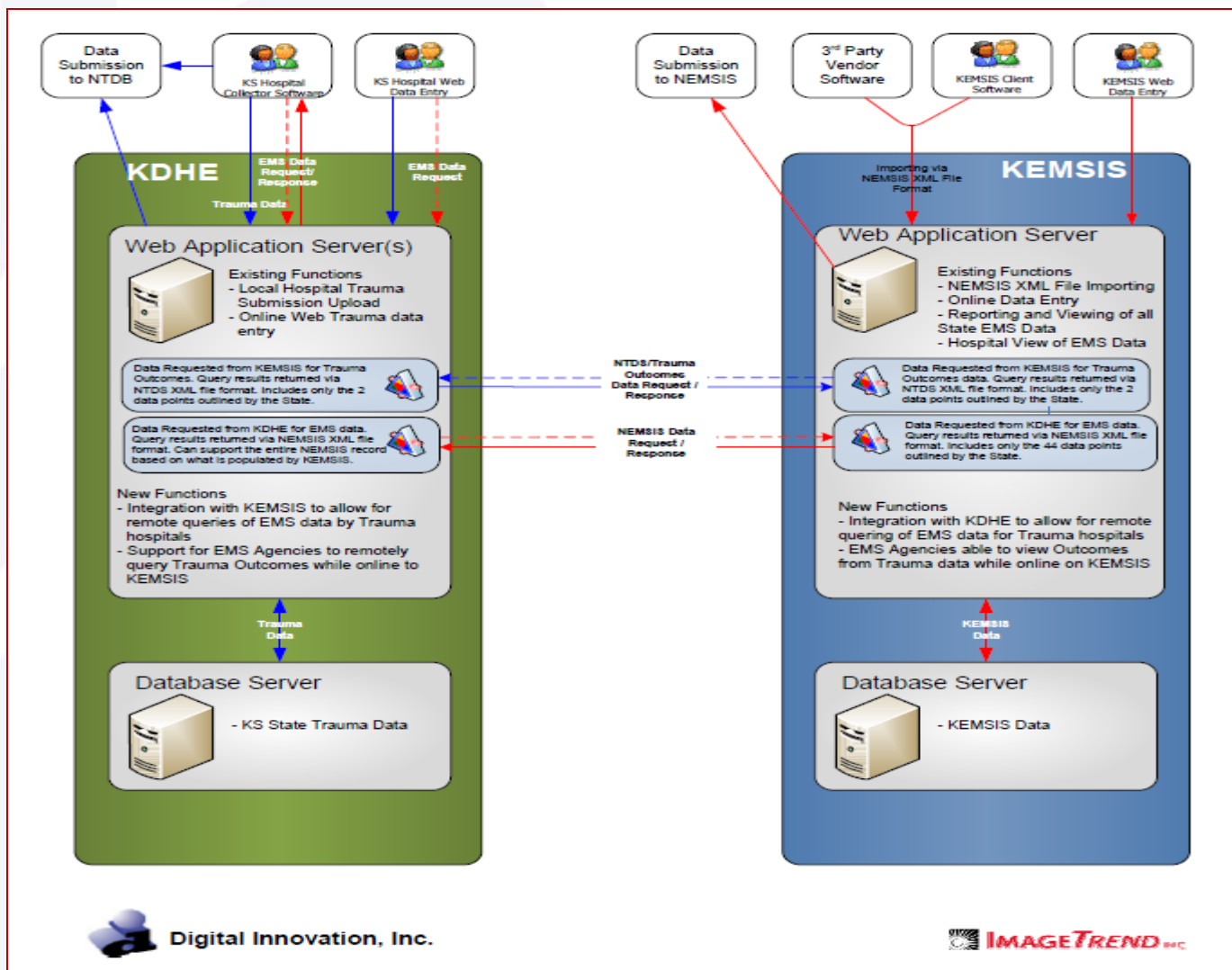


# Benefit of a Common XML

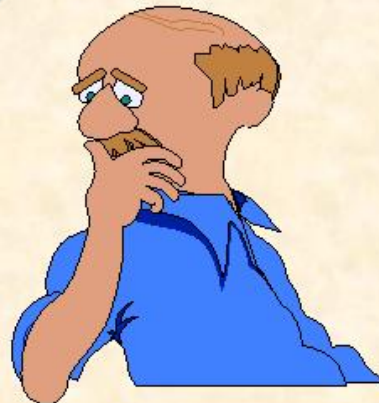
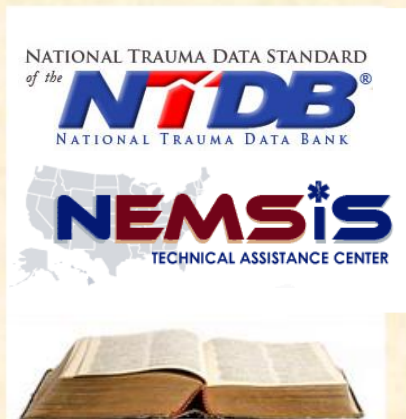
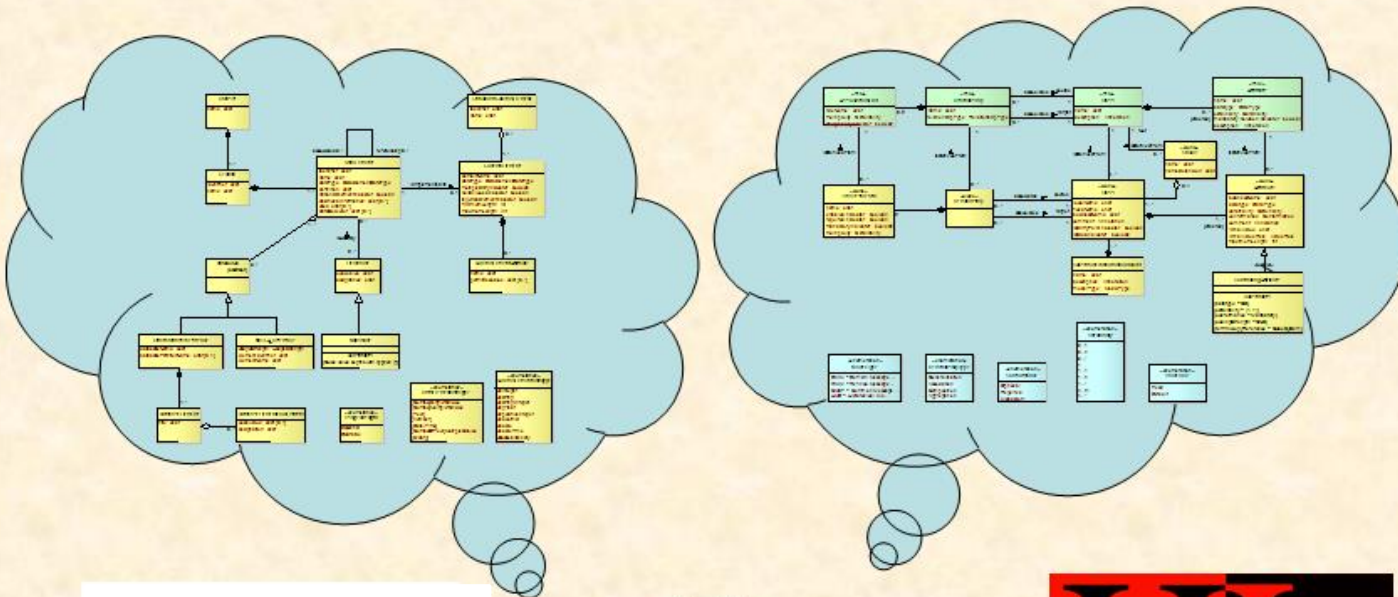




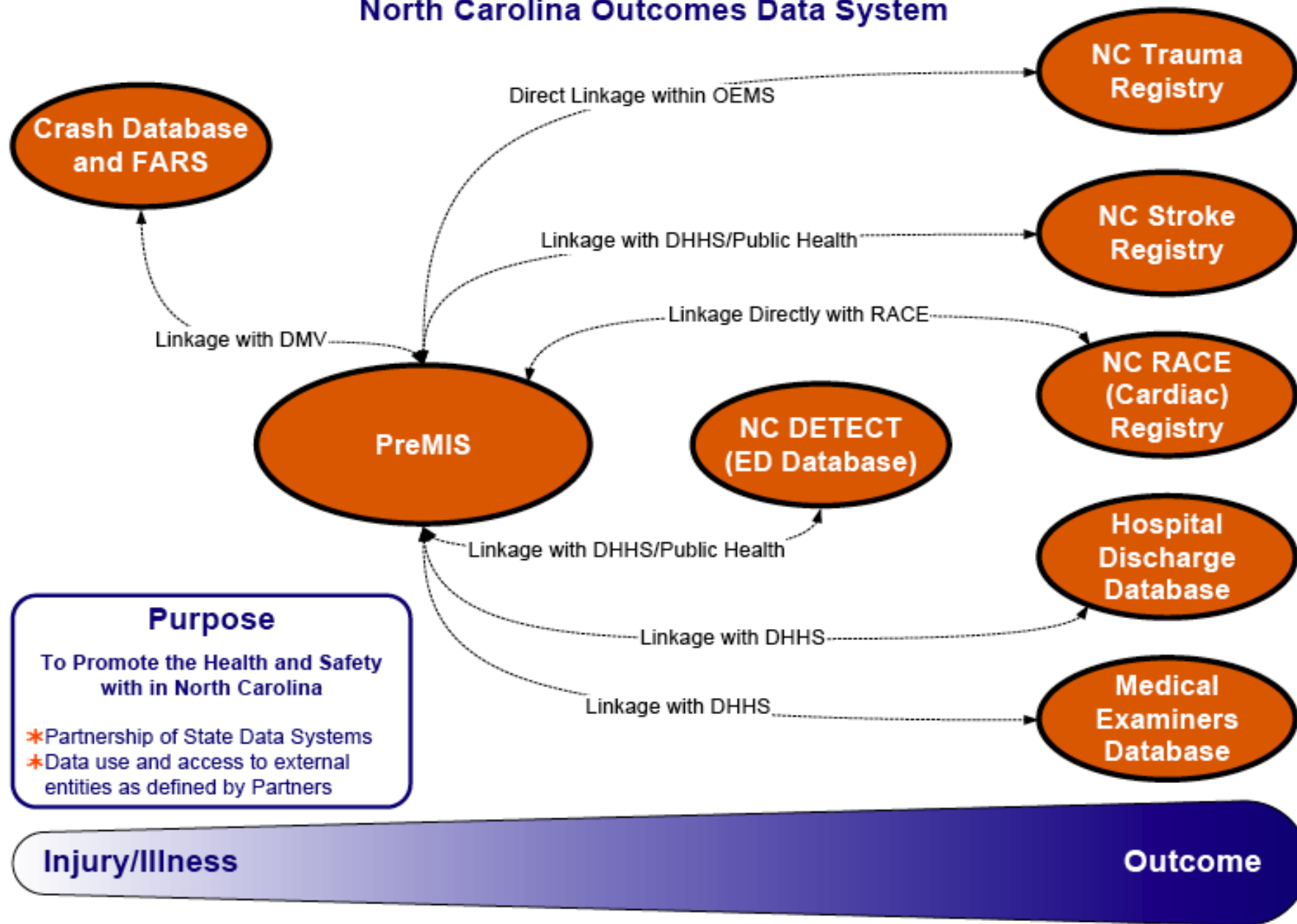
# State Implementation



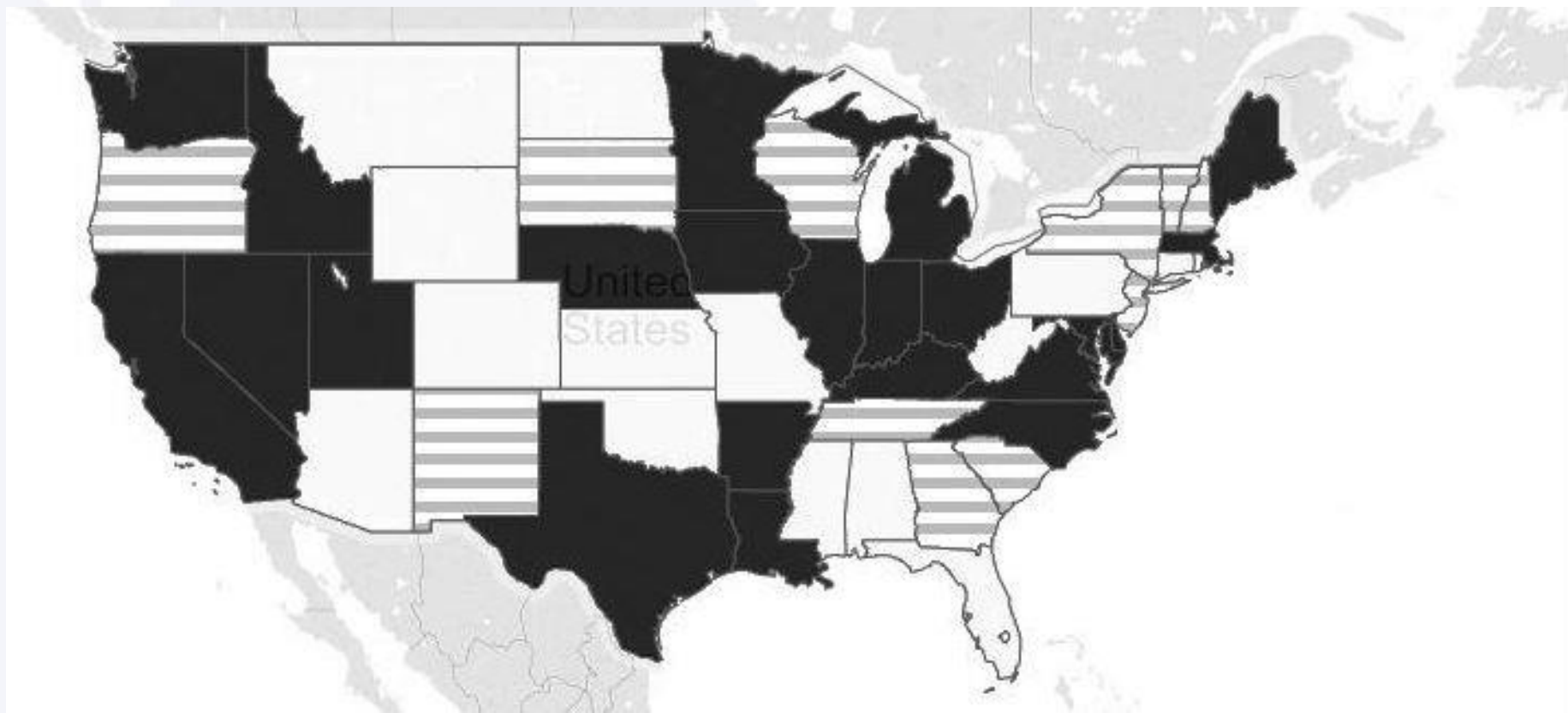
# Moving through HL7!



## North Carolina Outcomes Data System



# Probabilistic Linkage of Trauma Registry Data



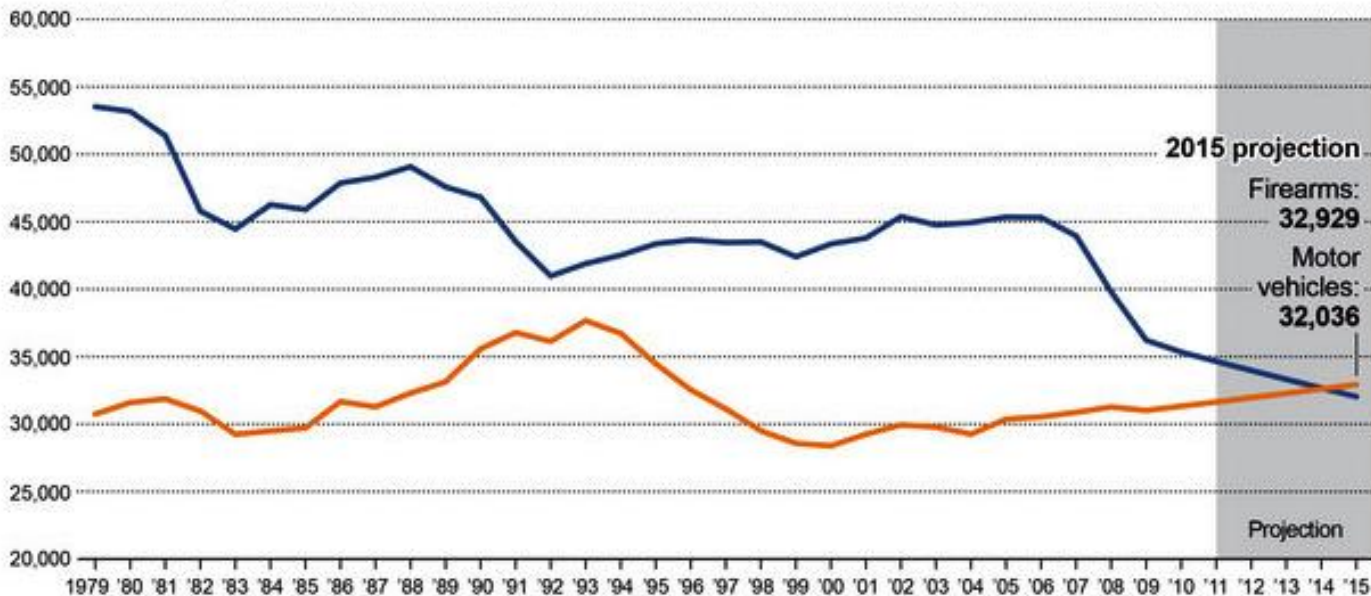


# Is Harmonization Important?

## Gun-Related Deaths in U.S. Set to Pass Auto Fatalities

The number of people killed by firearms in the U.S. is projected to exceed traffic fatalities for the first time by 2015.

Deaths caused by: — Motor vehicles — Firearms




Notes: Projected data from 2011 to 2015 based on 10-year average growth rate or decline. Firearm fatalities include homicides, suicides and accidents.

Source: Centers for Disease Control and Prevention data compiled by Bloomberg

Graphic: Alex Tribou  
BGOVgraphics@bloomberg.com

**Bloomberg**  
GOVERNMENT

# New Traffic Crash Benchmark


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## NCHRP 17-57 [Active]

### Development of a Comprehensive Approach for Serious Traffic Crash Injury Measurement and Reporting Systems

Project Data	
Funds:	\$449,986
Staff Responsibility:	Mark S. Bush
Research Agency:	University of Michigan
Principal Investigator:	Carol Flannagan
Effective Date:	5/22/2012
Completion Date:	10/1/2014

## BACKGROUND

Currently, severity of injuries is estimated by police on the scene of a traffic crash. A very simple rating scale is employed by many states or communities. Basically, the police officer codes the overall level of injury each person receives as killed, incapacitating, non-incapacitating, possible, or no injury for rating. However, what the officer observes at a crash scene can differ substantially from what is found by medical personnel. The National Highway Traffic Safety Administration's (NHTSA) Crash Outcome Data Evaluation System (CODES). State CODES programs conduct a probabilistic matching of statewide health records with crash data from participating in this system, and the technical process is complex. Trying to connect police reports with any further medical outcome or cost data can be a challenge. Barriers may exist for making such linkages within states. Performance measures are extensively referenced in draft proposals for the surface transportation safety performance, both fatal and non-fatal serious injuries are emphasized in these proposals. NHTSA and the Governors Highway Safety Association are developing measures that include use of fatalities and serious non-fatal injuries. The American Association of State Highway and Transportation Officials has also been working on this. If serious non-fatal injuries and crashes are to become major performance measures for states, then an accurate and feasible method for determining level of injury is needed.

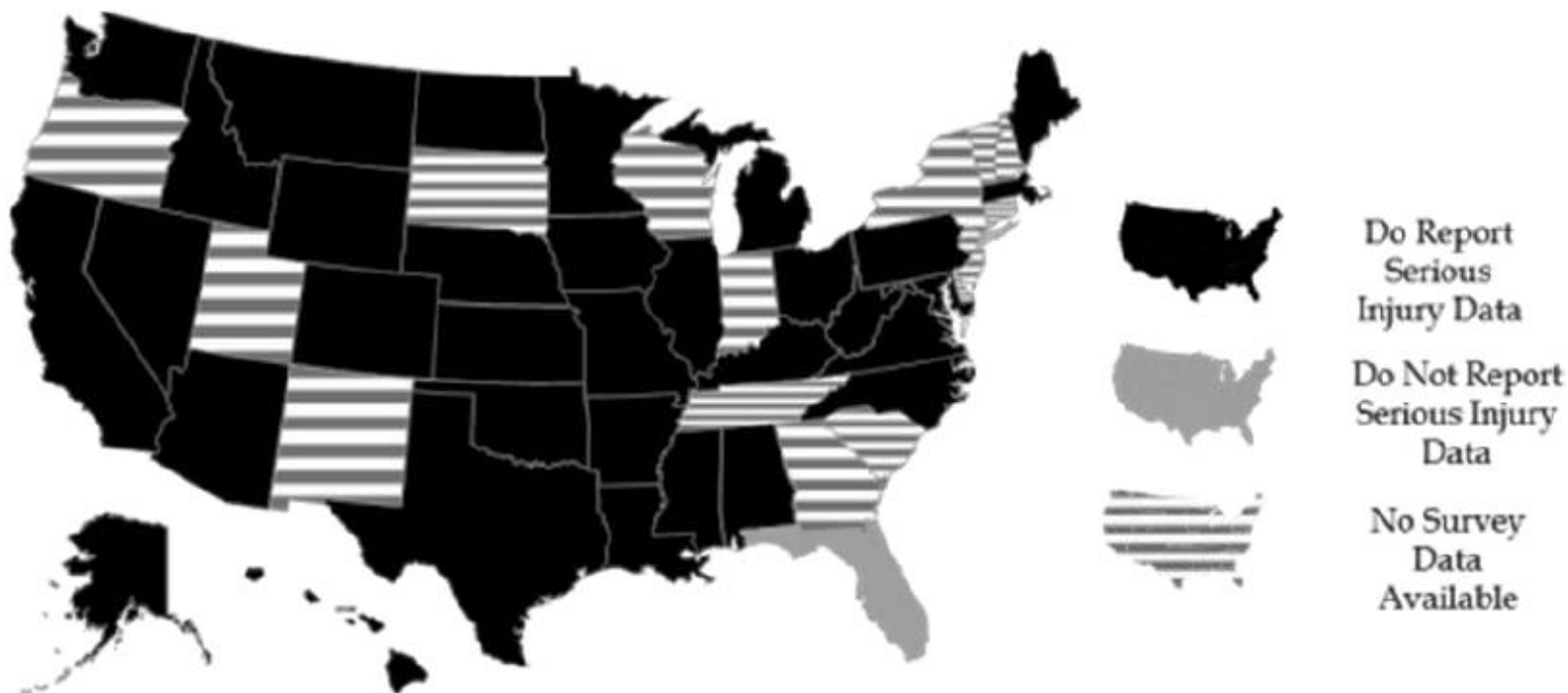
## OBJECTIVES

The objectives of this research are to:

- Identify an injury scoring system for further consideration. Analyze the advantages and disadvantages of conventional injury scoring systems based on International Classification of Diseases (ICD) codes and KABCO. Document advantages and disadvantages of various definitions for a serious injury metric.
-



# Collecting Serious Injury Data?



NCHRP 20-24 37K, Task 3 Survey, 2013. Survey sample includes data from 37 states.

**KABCO Injury Scale**

# Brick and Mortar HIE?



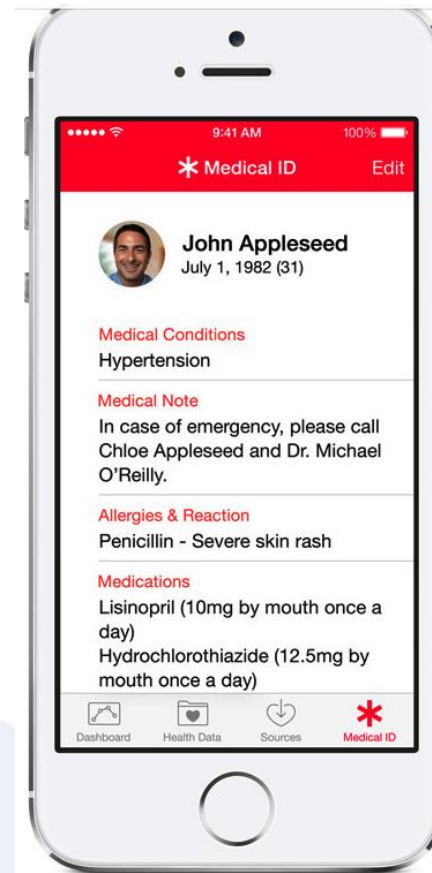
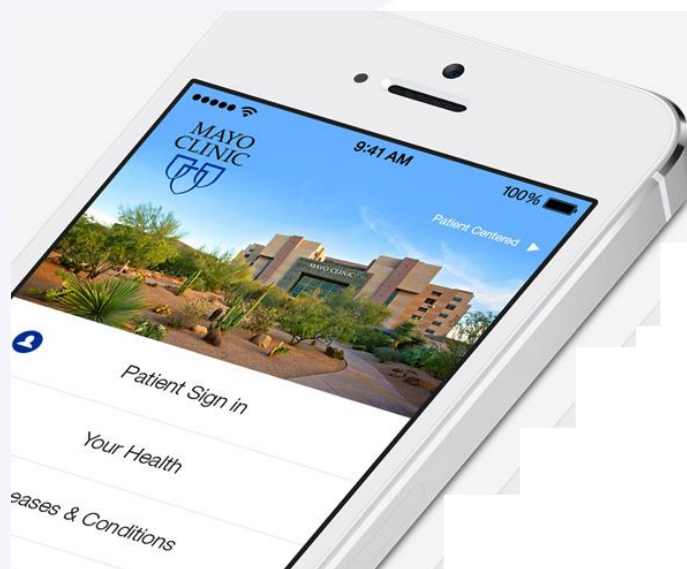
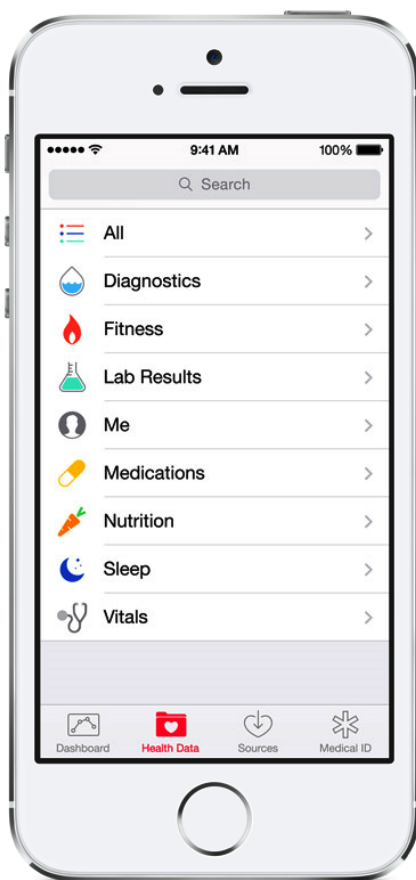
# Market Driven Tentacles!

Care Everywhere allows doctors and nurses from different organizations to electronically exchange patient medical information.



“Epic's Care Everywhere technology enables the exchange of 480,000 consolidated clinical document architecture, or C-CDA, documents each month with products built by other vendors – and that number is on the rise: more than double the amount that changed hands as of January 2014”

# iOS 8 Apple Healthkit



<https://www.apple.com/ios/ios8/health/>

# Favorable Market Forces

- How do we obtain Patient Functional Status?



- CMS Pay-For-Performance
  - Hospital Readmission Reduction Program

## Mobile Integrated Health Care



# MIHC Implementations

Mobile Integrated Healthcare Examples of MIHP		EMS	Call Center	Hospital	Primary Care	Mental Health/Detox	Cardiology	Pharmacy	Telemonitoring	Assisted Living	Hospice
<b>American Medical Response</b> Arlington, TX	Reducing CHF readmissions	◆		◆	◆						
	Decrease utilization of EMS by high utilizers	◆		◆	◆						
<b>University of Chicago Medicine</b> Chicago, IL	Reducing CHF Admissions	◆		◆	◆		◆	◆	◆	◆	
<b>MedStar Mobile Healthcare</b> Fort Worth, TX	Reducing Hospice Revocation	◆			◆						◆
	Decrease utilization of EMS by high utilizers	◆	◆	◆	◆						
	Reducing CHF readmissions	◆	◆	◆	◆		◆				
<b>Wake County EMS</b> Raleigh, NC	Decrease utilization by patients who fall	◆	◆	◆	◆						
	Decrease utilization by patients with substance abuse and mental illness	◆	◆	◆		◆					
<b>Barnes-Jewish Hospital/Abbott EMS</b> Saint Louis, MO	Reducing CHF, AMI, COPD, and pneumonia readmissions	◆		◆	◆		◆				



# NEMSIS Data Collection



## eOutcome.17

### eOutcome.17 - Outcome at Hospital Discharge

#### Definition

The patient's functional status at time of hospital discharge.

National Element	No	Pertinent Negatives (PN)	No
State Element	No	NOT Values	No
Version 2 Element		Is Nillable	No
Usage	Optional	Recurrence	0 : 1

#### Code List


Code	Description
4317001	No Symptoms At All
4317003	No significant disability despite symptoms; able to carry out all usual duties and activities
4317005	Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
4317007	Moderate disability; requiring some help, but able to walk without assistance
4317009	Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
4317011	Severe disability; bedridden, incontinent and requiring constant nursing care and attention
4317013	Dead

# Questions







# www.nemsis.org




National EMS Information System (NEMSIS)  
*Helping Unify EMS Data*

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State EMS Database  
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National Reports

## The NEMSIS Technical Assistance Center (TAC)...

Offering technical assistance on the implementation and tracking of National EMS Data.